Tempest
BY PLIANT

Tempest Parallel Zero Sync Generator

Operating Manual

Thank You

Thank you for purchasing a Tempest® Parallel Zero Sync Generator. We have made every effort to build a reliable, intuitive wireless intercom system that provides the same functionality that you expect from your hard-wired intercom equipment.

One of our goals in the design of Tempest was that it should work the way you think it should work – that is, it should be intuitive and similar to other equipment that you may already use. You will be able to begin using your new Tempest wireless intercom system with nothing more than the Quick Start Guide. However, to fully benefit from the available features, please read this manual carefully.

We want Tempest to make your job easier and your experience to be positive. To successfully familiarize yourself with the many diverse and powerful features Tempest offers, it is crucial that you acquaint yourself with the manual. Your time spent will help you get the most from your Tempest wireless intercom by making setup easier.

We are committed to providing you with a high quality product that will deliver years of trouble-free service. Should you experience any problem with your Tempest equipment, whether it is a warranted problem or service after you have owned the system for several years, we will be there to take care of you.

Thank you for choosing Tempest for your wireless intercom needs.

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Legal Information

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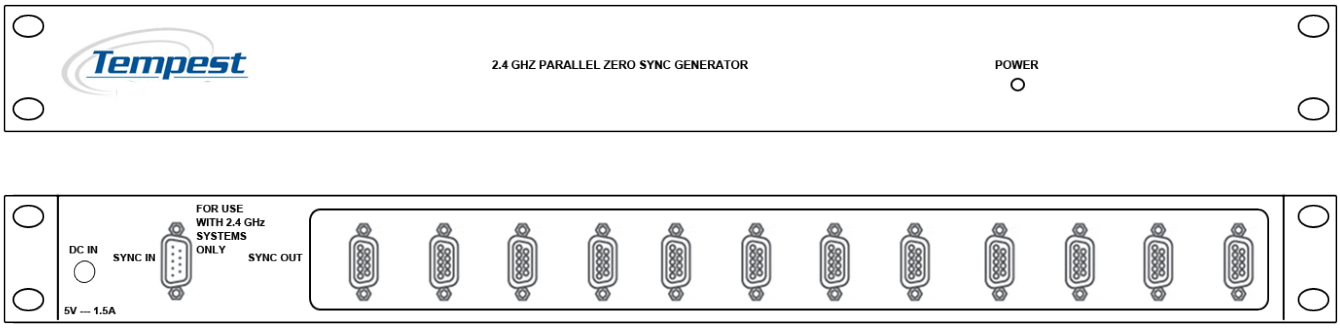
Important Safety Instructions

The word "Caution" is the lowest of the three signal words (Caution, Warning and Danger), with "Danger" being the highest. Therefore, whenever the word "Caution" is used, it may be replaced with either of the higher rated signal words: "Warning" or "Danger."

- DANGER – indicates a situation which, when not avoided, results in death or severe injury;
- WARNING – indicates a situation which, when not avoided, has the potential to result in death or severe injury;
- CAUTION – indicates a situation which, when not avoided, results or has the potential to result in minor injury.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Description



The Tempest Parallel Zero Sync Generator (PSG) provides a precise, zero reference synchronization signal to each connected Tempest 2.4GHz BaseStation. This signal aligns the hopping patterns and transmit/receive times of all connected BaseStations to produce the best possible multi-base, collocated RF performance. BaseStations and Remote Transceivers must contain radios that are version 1.18 or higher to fully utilize the Zero Reference Sync (ZSync™) signal.

The Zero Reference Sync signal that is generated by the PSG (or the ZSync Dongle, sold separately) is a more advanced synchronization signal than has by utilized previously in Tempest products. Because of this, older Tempest BaseStations and Remote Transceivers must have a radio upgrade to version 1.18 or higher to utilize the enhanced benefits of the Zero Reference Sync signal. BaseStations and Remote Transceivers with radios older than version 1.18 will still accept the new Zero Reference Sync signal, but they will not have their hopping patterns aligned as would be the case with radios that are at version 1.18 or higher. In this case, operation will be much better than not having any Sync signal, but will not be nearly as good as if the Zero Reference Sync signal was being fully utilized. To determine whether you have the proper version radio, refer to the Operating Manual and/or Tech Menu of your Tempest BaseStation.

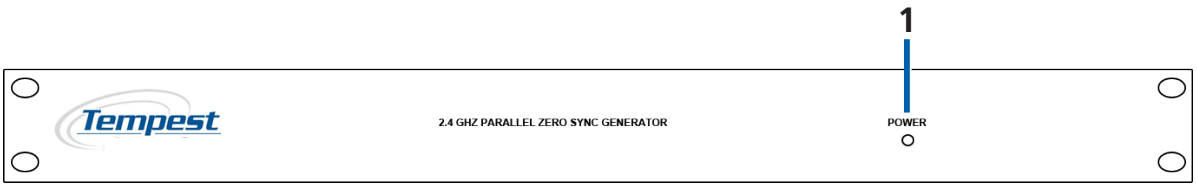
A single Tempest Parallel Zero Sync Generator supports up to 12 Tempest 2.4GHz BaseStations using the 12 isolated Sync Out DE-9 connectors on the rear panel of the PSG. Each BaseStation is connected directly to the Parallel Zero Sync Generator via a DE-9 extension cable in a star configuration. The connection is made from a PSG Sync Out DE-9F to each BaseStation's Base Sync In DE-9M connector. This allows each BaseStation to receive the proper synchronization signal completely independent of the condition or presence of any of the other BaseStations.

If more than 12 Tempest 2.4GHz BaseStations are required, a second Parallel Zero Sync Generator may be added. In this case the two PSGs must be connected together utilizing a Sync Out DE-9F connector on the first PSG to the Sync In DE-9M on the rear panel of the second PSG. This will allow the synchronization of up to 23 Tempest 2.4GHz BaseStations.

The Parallel Zero Sync Generator is for use with 2.4GHz Tempest BaseStations only. This product does not apply to the 900MHz Tempest model.

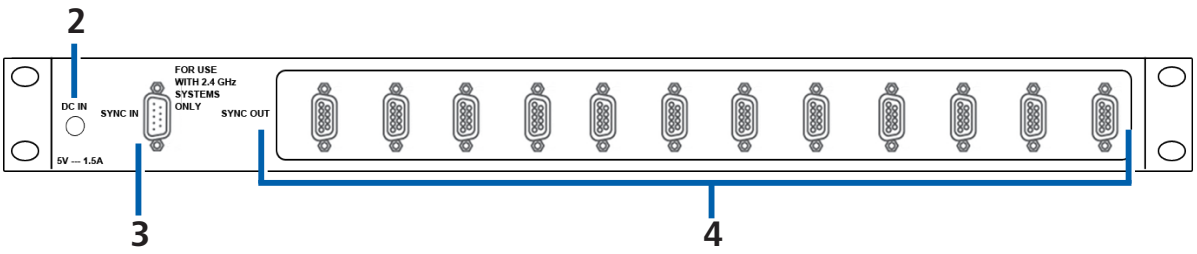
PSG Overview

Front



1 - ***Power LED*** - Indicates the unit is receiving power.

Back



2 - ***DC In*** - DC power outlet; 5V 1.5A

3 - ***Sync In*** - The Sync In DE-9M is used in configurations where multiple Parallel Zero Sync Generators are needed. The units themselves can be synced to one another.

4 - ***Sync Out*** - There are 12 Sync Out DE-9F connections for connecting to up to 12 Tempest BaseStations. The Sync Out connects into the "Base Sync In" port of the BaseStation.

Setup and Installation

Select a Location

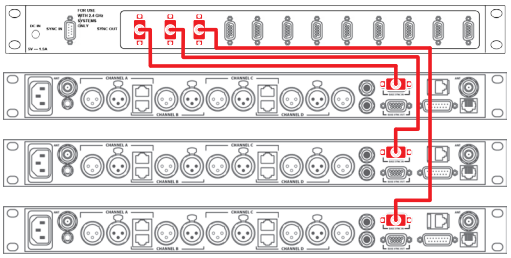
It is usually best to locate the Tempest Parallel Zero Sync Generator near the BaseStations with which it will be used. In the case where all of the BaseStations are together in a single rack, the PSG should be located in that rack. This would be the case if you are only covering one area or you are using Remote Transceivers connected to the BaseStations via CAT-5 cable. If the BaseStations to be ZSynced are in various locations, the PSG should be centrally located in respect to all of the BaseStations that are to be synchronized.

Connectivity

The PSG connects to each Tempest BaseStation via a DE-9 (male to female) cable. Up to 12 BaseStations are connected to the PSG in a star configuration. Cables may be a maximum length of 2500 feet (760m). It is extremely important that cable runs are kept to no more than 3,000 feet (915 m) or timing errors will occur that will cause BeltStations to have trouble connecting to other BaseStations in the group.

1. Turn power to PSG and Tempest BaseStations OFF.
2. Connect the male end of the DE-9 to one of the "Sync Out" ports on the rear of the PSG.
3. Connect the DE-9 female end to the "Base Sync In" port on the rear of the first BaseStation. Proceed in connecting all additional cables to additional BaseStations in this same manner.
4. Power ON the PSG and then power ON your BaseStations.

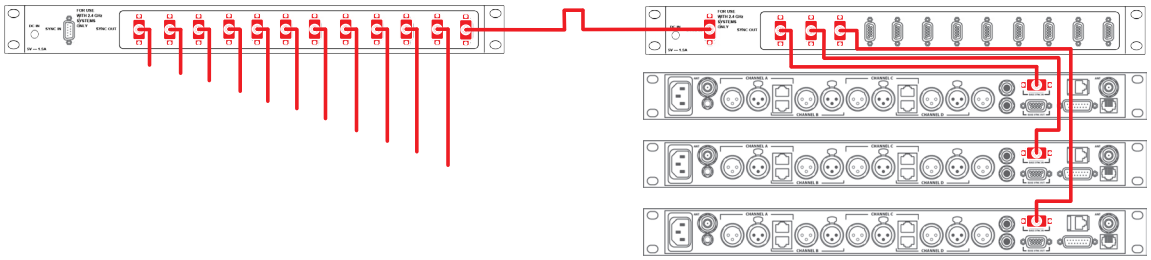
Parallel Sync Generator (Single Zone)



If more than 12 Tempest 2.4GHz BaseStations are required, a second Parallel Zero Sync Generator may be added. In this case the two PSGs must be connected together utilizing a Sync Out DE-9M connector on the first PSG to the Sync In DE-9F on the rear panel of the second PSG. This will allow the synchronization of up to 23 Tempest 2.4GHz BaseStations.

Using Multiple Parallel Sync Generators

PSG 1 (11 Bases) *PSG 2 (3 Bases)*



Technical Specifications*

Electrical

DC Input Voltage Range	4.75–5.25 VDC
Input Frequency Range	47–63 Hz
AC Input Current	600mA max/ 500mA typ
In rush Current	30A max @ 115V/60A max @ 230V
AC Power Consumption Min/Max	1.5W/6W
DC Power Consumption Min/Max	1.25W/5W

Safety and Compliance

Hi-Pot (10mA for 1min)	3000 VAC
Safety Approvals	UL, FCC, CB, CE
EMI standard	FCC class A, CE
RoHS Compliant	Yes
Leakage Current	0.25mA

Physical

Rack Space	1RU
Unit Weight	2 lbs 12 oz (1.25 kg)
Dimensions	19 in x 8.75 in x 1.75 in (L x D x H) (48.26 cm x 22.23 cm x 4.45 cm)

*Please check our website for the latest system specifications and certifications.

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